HUGHES
Health Clinic

Alaska Rural Primary Care Facility
Code and Condition Survey Report

July 23, 2001

I. EXECUTIVE SUMMARY

Overview

The Hughes Clinic is part of a two-story, wood frame building constructed in 1993. The building shell appears to be in satisfactory condition. The clinic is located on the first floor of the building and the second floor is occupied by community and residential space. The lack of adequate space for medical supplies, the lack of a trauma room, and the lack of additional work spaces prevent the staff from providing the level of care needed on a daily and emergency basis.

Renovation and Addition

The existing clinic is 768 s.f. and would require an addition of 732 s.f. to meet the 1500 s.f. minimum area recommended for a small clinic by the Alaska Rural Primary Care Facility study. The floor plan layout would require the remodel of approximately 26% of the interior space. The cost of required renovations and code upgrades, combined with the cost of a new addition equal 103% of the cost of a new clinic.

New Clinic

Because the cost of renovation and addition is more than 75% of the cost of new construction, a new clinic of at least 1500 s.f. should be built to replace the existing clinic. It appears that a new site near the existing site would be the most suitable location since it is near utilities, the school, and other community services and is of adequate size to accommodate the 1500 s.f. structure.

II. GENERAL INFORMATION

A. The Purpose of the Report

ANTHC has entered into a cooperative agreement with the Denali Commission to provide management of the small clinic program under the Alaska Rural Primary Care Facility (ARPCF) assessment, planning, design, and construction. The purpose of the Code and Condition Survey Report is to validate the data provided by the community in the Alaska Rural Primary Care Facility Needs Assessment and to provide each community with a uniform standard of evaluation for comparison with other communities to determine the relative need among the communities of Alaska for funding assistance for the construction of new or remodeled clinic facilities. The information gathered will be tabulated and analyzed according to a set of fixed criteria that will yield a priority list for funding. Additionally, the relative costs of new construction vs. remodel/addition will be evaluated to determine the most practical and cost effective means to bring the clinics up to a uniform standard of program and construction quality. The information provided in this report is one component of the scoring for the small clinic RFP that the Denali Commission sent to communities in priority Groups 1 and 2.

B. The Assessment Team

The survey was conducted on May 23, 2001 by John Biggs, AIA, Architects Alaska and Ralph DeStefano, PE, RSA Engineering. Dan Williams of ANTHC and Theresa Gallagher, Tanana Chiefs Conference, were the team escorts. Dan and Theresa made introductions and conducted the village briefings and considered alternative site locations with village leaders. Team members who assisted in the preparation of the report included Stephen Schwicht and Ian VanBlankenstein of NANA/DOWL, project managers for the survey team, and Jay Lavoie of Estimations, Inc.

C. The Site Investigation

The format adopted is similar to the "Deep Look", a facility investigation and condition report used by both ANTHC and the Public Health Service, in maintaining an ongoing database of facilities throughout the country. Facilities are evaluated with respect to the requirements of the governing building codes and design guidelines. Building code compliance, general facility condition, and program needs have been evaluated. This written report includes a floor plan of the clinic and a site plan indicating the existing clinic site. Additional information gathered during the site investigation that is referred to in the report, which includes sketches of building construction details, a building condition checklist, and proposed plans for village utility upgrades, are not included with this report. This information is available for viewing at ANTHC's Anchorage offices and will be held for reference.

III. CLINIC INSPECTION SUMMARY

A. Community Information

The community of Hughes has a current population of 78 as published in the 2000 U.S. Census. It is located 210 miles northwest of Fairbanks in the Ft. Gibbon Recording District. It is a part of the Doyon Regional Corporation. Refer to the attached Alaska Community Database prepared by the Alaska Department of Community and Economic Development in Appendix C for additional community information.

B. General Clinic Information

The Hughes Clinic was constructed in 1993 and appears to be a prototypical packaged building prepared by a lumber company. The clinic portion of the building is approximately 24' x 32' in size and is constructed of wood frame walls, floor, and roof. The interior is lined with gypsum board, and the building is clad with wood siding and metal roof. The clinic is organized around a central corridor, with a stair to the second floor located at the main entry vestibule. The lower floor of the two-story building serves as the clinic.

C. Program Deficiency Narrative

The main programmatic deficiencies pertain to lack of adequate storage, inadequate waiting area, lack of a reception area, lack of a trauma room, and lack of handicap accessible toilet room. Any addition will also need to provide trauma access. The interior stairs are narrow and lack handrails. These stairs would need to be brought up to code for proper access.

The following table illustrates a comparison between the current actual square footage (SF) and the 1500 s.f. minimum area recommended by the Alaska Rural Primary Care Facility study for a Small Clinic:

Table 1 – ARPCF Clinic Area Comparison

Purpose/Activity	#	Existing Net SF	#	ARPCF Small	Difference
Arctic Entry	1	36	1	50	14
Wait/Recep/Closet	1	58	1	100	42
Trauma/Telemed/Exam	1	106	1	200	94
Office/Exam	1	102	1	150	48
Admin./Records	1	77		-	-77
Pharmacy/Lab		-	1	80	80
Portable X-ray		-		-	-
Spec. Clinic/Health Ed./Conf.	1	209	1	150	-59
Patient Holding/Sleep Room	1	81	1	80	-1
Storage		-	1	80	80
HC toilet		-	1	60	60
Janitorial Closet		-	1	30	30
Total Net Area				980	
Mechanical Room	1	100	1	114	14
Morgue		-	1	30	30

The Hughes Clinic has a current gross area of 768 s.f. This would require a gross building area expansion of approximately 732 s.f. to meet the 1500 s.f. minimum ARPCF requirement for the Small clinic.

An analysis of the existing building's program functions follows. Please also refer to the floor plan in Section H:

- **Arctic Entries**: The arctic entry for the building is the entry vestibule. It is in satisfactory condition but is smaller than the guideline requirement.

- **Waiting:** The waiting area is too small and functions marginally. There is no supervision of the waiting area.

- **Trauma/Telemed/Exam:** None provided

- **Office/Exam:** The exam room is small but functional.

- **Administration/Records:** None provided.

- **Pharmacy/Lab:** None provided.
- **Specialty Clinics:** None provided.
- **Patient Holding/Sleep:** None provided for the clinic level. Sleeping areas for visiting doctors are provided on the second floor, however these areas are not accessible.
- **Storage:** None provided.
- **HC Toilet Room:** The toilet room lacks sufficient clear space for handicapped accessibility and does not have accessible fixtures.
- **Janitor Closet:** the Janitor Closet is located in the mechanical room.
- **Ancillary Spaces:** There are no ancillary spaces in this clinic.

D. Architectural/Structural Condition

Architecturally and structurally, the building appears to be well-built and in satisfactory condition. The foundation is triple 3x12 on a gravel pad. The floor is 2x12 beams and joists. The walls are 2x6 walls with batt insulation. The roof is a metal roof over prefabricated wood trusses. All systems appear to be in good or excellent condition. There is a substantial horizontal crack at the top and bottom of the second floor framing at the interior stairs, however, this cracking does not appear to pose a structural threat to the building. This crack appears to be the result of seismic activity and subsequent settlement. Staff indicated that this crack did appear suddenly after a large earthquake several years ago, but since that time no major changes have occurred. Such cracking is only visible at the stair and may be due to a lack of adequate shear resistance at the 2-story stairway wall (the only 2-story interior wall in the building). The cause of this cracking could probably be remedied with additional shear ties.

E. Site Considerations

Because construction of a new clinic is required at Hughes, selection of a new site is necessary. A new site near the existing clinic would probably be preferable, because of its proximity to the existing school, utilities, and other community services. As is typical for most buildings in Hughes, the new site will require a gravel pad. It appears that multiple sites are available for siting the new clinic. A final decision on siting has not yet been made by village residents.

F. Mechanical Condition

Heating and Fuel Oil: An Energy Kinetics boiler provides heating for the clinic with a circulation pump and a single zone of hydronic baseboard around the perimeter of the building. The boiler is not provided with all code-required safeties and its glycol solution is in bad shape. The system needs to be flushed and refilled. A Monitor stove is also provided for back-up heat.

Fuel oil is provided to the boiler from a 200-gallon tank mounted on a wooden stand adjacent to the building. The fuel oil is piped to the boiler in copper piping. Fuel for the Monitor stove is stored in a 55-gallon drum adjacent to the building. Both fuel tanks do not have adequate clearance to the building, 5 feet required. The 55 gallon tank is not UL listed, not properly supported and its piping is not properly supported. The tank needs to be replaced and supported properly with adequate clearance to the building.

Ventilation: The clinic has no mechanical ventilation except for exhaust fans in the restroom, which are not operational. Those fans need to be replaced. The only other source of ventilation for the occupied spaces is though operable windows. The clinic needs to be provided with a mechanical ventilation system and should not rely on operable windows alone.

Plumbing: Domestic water and the sewer services are obtained from the nearby washeteria. Hot water is generated by a heat exchanger that is part of the boiler package. For added hot water capacity, an unwired electric hot water heater has been provided. Plumbing fixtures in the clinic include a toilet and lavatory in the restroom, neither meeting ADA requirements, and sinks in the exam rooms. The upstairs living quarters have a shower/tub, toilet, lavatory, and kitchen sink. There was no mop sink in the clinic and water for house keeping is provided through a hose connection from the lavatory in the restroom. This is a code and health problem since the system is not protected with a vacuum breaker and cross contamination can occur.

G. Electrical Condition

Power: 120/240-volt single-phase power is provided to the clinic's electrical meter through an overhead service. The system appears to be grounded correctly to a grounding rod located below the meter. A 125-amp breaker is provided prior to the electrical panel located in the clinic. The panel installation appeared neat and orderly. All 20 breakers in the panel were used and there was no room for additional breakers. All wiring from the panel was run in EMT or Romex. The numbers of receptacles inside the building is appropriate, and receptacles located within 10 feet of the exam room sinks and the restroom sink are protected with GFCIs except in the upstairs bathroom. There was a single GFCI outlet on the outside of the building.

Lighting and Emergency Fixtures: Interior lighting is provided from Fluorescent fixtures and the lighting levels appear adequate. Exterior lighting is provided from incandescent fixtures at the clinic entrance. Emergency light fixtures and exit signs are provided in the clinic, but the batteries in the light fixtures are dead, so they need to be replaced. The fire alarm system consists of a pull station at the main entrance, hard wired smoke detectors upstairs and downstairs, and horns inside and outside. Battery-operated smoke detectors are also installed in the exam rooms. One of the smoke detector heads was missing upstairs.

Telecommunications: The telecommunication system includes two phone lines and a fax line to the clinic. The clinic has an Internet connection, but had not received a Telemed system.

H. Existing Facility Floor Plan

See following sheet for the floor plan of the existing clinic.

J. Community Plan

Refer to the attached community plan for location of the existing clinic and the proposed location for the new clinic. If the existing clinic site is the preferred location or if a new site has not yet been selected, only the existing clinic location will be shown.

IV. DEFICIENCY EVALUATION AND COST ASSESSMENT

The attached deficiency reporting forms are based on Public Health Service form AK H SA-43. The forms are numbered sequentially for each discipline starting with **A01** for Architectural and structural deficiencies, **M01** for Mechanical deficiencies and **E01** for Electrical deficiencies.

A. Deficiency Codes

Deficiencies are further categorized according to the following PHS Deficiency codes to allow the work to be prioritized for federal funding, should that apply. Deficiency codes used in this survey include:

02 **Fire and Life Safety:** These deficiencies identify areas where the facility is not constructed or maintained in compliance with provisions of the state mandated building codes including the International Building Code, The Uniform Fire Code, NFPA 101, The Uniform Mechanical and Plumbing Codes and The National Electrical Code.

03 **Safety:** These deficiencies identify miscellaneous safety issues.

04 **Environmental Quality:** This addresses DEC regulations, hazardous materials and general sanitation.

05 **Program Deficiencies:** These are deficiencies which show up as variations from space guidelines established in the Alaska Primary Care Facility Facility Needs Assessment Project and as further evaluated through observation at the facility site and documented in the facility floor plans.

07 **Disability Access Deficiencies:** The items with this category listing are not in compliance with the Americans with Disabilities Act.

08 **Energy Management:** These deficiencies address the efficiency of heating systems/fuel types and the thermal enclosures of buildings.

11 **Structural Deficiencies:** These are deficiencies with the fabric of the building. It may include the foundations, the roof or wall structure, the materials used, the insulation and vapor retarders, the attic or crawl space ventilation and the general condition of interior finishes. Foundation systems are included in this category.

12 **Mechanical Deficiencies:** These are deficiencies in the plumbing, heating, ventilating, air conditioning, or medical air systems.

13 **Electrical Deficiencies:** These are deficiencies with electrical generating and distribution systems, fire alarm systems and communications systems.

14 **Utilities:** This category is used for site utilities, as opposed to those within the building and may include sewer lines and water and power distribution.

B. Photographs

Each sheet has space for a photograph. Some deficiencies do not have photos. Photographs do not cover all areas where the deficiencies occur but are intended to provide a visual reference to persons viewing the report who are not familiar with the facility. Additional photographs of the clinic and the surrounding area are included in Appendix B.

C. Cost Estimate General Provisions

New Clinic Construction

- **Base Cost**

The Base Cost provided in Section VI of this report is the direct cost of construction, inclusive of general requirements (described below) and contingency for design unknowns (an estimating contingency) The base cost is exclusive of overhead and profit, mark-ups, area cost factors and contingencies. Material costs for the project are all calculated FOB Anchorage and labor rates are based on Davis Bacon wages, regionally adjusted to Anchorage. Transportation costs, freight, Per Diem and similar costs are included in the base costs. The Project Factors and Area Cost Factor are multipliers of the base costs.

General Requirements are based on Anchorage costs without area adjustment. It is included in the Base Cost for New Clinics. These costs are indirect construction cost not specifically identifiable to individual line items. It consists of supervision, materials control, submittals and coordination, etc. The general requirements factor has not been adjusted for Indian Preference.

The Design Unknowns Contingency is an estimator's contingency based on the schematic nature of the information provided, the lack of any real design, and the assumption that any project will encompass related work not specifically mentioned.

- **Project Cost Factors**

  Equipment Costs for new medical equipment has been added at 17% of the cost of new floor space.

  Design Services is included at 10% to cover professional services including engineering and design.

  Construction Contingency is included at 10% of the Base Costs to cover changes encountered during construction.

  Construction Administration has been included at 8% of the Base Costs. This is for monitoring and administration of the construction contract.

- **Area Cost Factor**

The Area Cost Factor used in the cost estimates for this facility is shown in Section VI of this report. The area cost factors are taken from a recent study completed for the Denali Commission for statewide healthcare facilities. The numbers are the result of a matrix of cost variables including such items as air travel, local hire costs, room and board, freight, fire protection equipment, foundation requirements, and heating equipment as well as contractor costs such as mobilization, demobilization, overhead, profit, bonds and insurance. These parameters were reconsidered for each village, following the site visit, and were modified, if necessary.

- **Estimated Total Project Cost of New Building**

This is the total estimated cost of the project, including design services. The construction contract will be work subject to Davis Bacon wages, and assumes construction before year-end 2001. No inflation factor has been applied to this data.

Remodel, Renovations, and Additions

- **Base Cost**

The Base Cost provided in the specific deficiency sheets is the direct cost of construction, exclusive of overhead and profit, mark-ups, area cost factors and contingencies. Material costs for the project are all calculated FOB Anchorage and labor rates are based on Davis Bacon wages, regionally adjusted to Anchorage. Most of the deficiency items do not constitute projects of sufficient size to obtain efficiency of scale. The estimate assumes that the projects are completed either individually, or combined with other similar projects of like scope. The numbers include moderate allowances for difficulties encountered in working in occupied spaces and are based on remodeling rather than on new construction costs. Transportation costs, freight, Per Diem and similar costs are included in the base costs. The General Requirements, Design Contingency and Area Cost Factors are multipliers of the base costs.

The cost of Additions to clinics is estimated at a unit cost higher than New clinics due to the complexities of tying into the existing structures.

Medical equipment is calculated at 17% of Base Cost for additions of new space only and is included as a line item in the estimate of base costs.

- **General Requirements Factor**

General Requirements Factor is based on Anchorage costs without area adjustment. The factor is 1.20. It is multiplied by the Base Cost to get the project cost, exclusive of planning, architecture, engineering and administrative costs. This factor assumes projects include multiple deficiencies, which are then consolidated into single projects for economies of scale. The general requirements factor has not been adjusted for Indian Preference.

- **Area Cost Factor**

The Area Cost Factor used in the cost estimates for this facility is shown in Section VI of this report. The area cost factors are taken from a recent study completed for the Denali Commission for statewide healthcare facilities. The numbers are the result of a matrix of cost variables including such items as air travel, local hire costs, room and board, freight, fire protection equipment, foundation requirements, and heating equipment as well as contractor costs such as mobilization, demobilization, overhead, profit, bonds and insurance. These parameters were reconsidered for each village, following the site visit, and were modified, if necessary.

- **Contingency for Design Unknowns (Estimating Contingency)**

The Design Unknowns Contingency is an estimator's contingency based on the schematic nature of the information provided, the lack of any real design, and the assumption that any project will encompass related work not specifically mentioned. The factor used is 1.15.

- **Estimated Total Cost**

This is the total estimated bid cost for work completed under Davis Bacon wage contracts, assuming construction before year-end 2001. This is the number that is entered in the front of the deficiency form. No inflation factor has been applied to this data.

- **Project Cost Factors**

Similar to new clinics, the following project factors have been included in Section VI of this report.

Design Services is included at 10% to cover professional services including engineering and design.

Construction Contingency is included at 10% of the Base Costs to cover changes encountered during construction.

Construction Administration has been included at 8% of the Base Costs. This is for monitoring and administration of the construction contract.

- **Estimated Total Project Cost of Remodel/Addition**

This is the total estimated cost of the project including design services, the construction contract cost for work completed under Davis Bacon wages and assuming construction before year-end 2001. No inflation factor has been applied to this data.

V. SUMMARY OF EXISTING CLINIC DEFICIENCIES

The attached table summarizes the deficiencies at the clinic and provides a cost estimate to accomplish the proposed modifications. If all deficiencies were to be addressed in a single construction project there would be cost savings that are not reflected in this tabulation. The total cost of remodel/addition shown in Section VI is intended to show an overall remodel cost that reflects this economy. Refer to Section VI for a comparison of remodel/addition costs to the cost of new construction. The specific deficiency sheets are included in Appendix A.

VI. NEW CLINIC ANALYSIS

The decision on whether to fund new clinic construction or a remodel/addition of the existing clinic is to be determined by comparing the cost of a new facility designed to meet the program requirements of the Alaska Rural Primary Care Facilities minimum area requirements with the projected combined cost of renovating, remodeling and adding onto the existing building to provide an equivalent facility. If the cost of the remodel/addition project is greater than 75% of the cost of constructing an altogether new facility then a new facility is recommended. That ratio is computed as follows:

- **The cost of a new clinic in Hughes is projected to be:**

Base Anchorage Cost per s.f.		$183/ s.f.
Medical Equipment Costs @ 17%		$31
Design Services 10%		$18
Construction Contingency 10%		$18
Construction Administration. 8%		$15
Sub-total		$265/ s.f.
Area Cost Factor for Hughes	1.45*	
Adjusted Cost per s.f.		$386/ s.f.

Total Project Cost of NEW BUILDING 1,500 x $386 = $579,000

- **The cost of a Remodel/Renovation/Addition is projected to be:**

Projected cost of code/condition renovations (From the deficiency summary)
90% of cost of code/condition improvement** $123,498 Renovation

Projected cost of remodeling work (See A07)
768 s.f. clinic @ 26% remodel = 200 s.f. $23,513 Remodel

Projected cost of building addition (See A06)
1,500 s.f. – 768 s.f. = 732 s.f. $319,269 Addition
Design 10%, Const. Contingency 10%, Const. Admin. 8% $130,558

Total Project Cost of REMODEL ADDITION $596,838

- **Ratio of remodel:new is $596,838 : $579,000 = 1.03X**

The cost of a remodel/addition for this clinic would cost 103% the cost of a new clinic, therefore, a new clinic is recommended for this community.

* The Area Cost Factor was refined by Estimations, Inc. in July 2001 based on information obtained during the site visit.

** The 90% factor represents economy of scale by completing all renovation work in the same project.

Appendix A: SPECIFIC DEFICIENCIES LISTING

Refer to the attached sheets for the listing of the individual deficiencies and the corrective action recommended.

Appendix B: GENERAL SITE PHOTOGRAPHS

The following sheets provide additional photographic documentation of the existing building and surroundings.

Appendix C: ADCED Community Profile

Refer to the attached document prepared by Alaska Department of Community and Economic Development profiling the community of Lake Minchumina.

This Report was Prepared by

NANA/DOWL, JV

with assistance from

Architects Alaska
and
RSA Engineering
Under
Contract No. ANTHC-98-03
Delivery Order 01-D-0558

A Division of DOWL

Architects Alaska
A Professional Corporation

Architecture
Facility Planning
Interior Architecture

900 W. 5th Ave. Suite 403
Anchorage, AK 99501
(907) 272-3567

R S A Engineering, Inc.